

The opinion in support of the decision being entered today is  
*not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ARTHUR WONG  
and SAEED FERESHTEHKHOU

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Appeal 2006-2791  
Application 09/729,626  
Technology Center 1700

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Decided: August 14, 2007

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Before THOMAS A. WALTZ, CATHERINE Q. TIMM, and LINDA M.  
GAUDETTE, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Primary Examiner's final rejection of claims 1-3, 11-18, 21-25, 31-34, 37, 38, and 47-72, which are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 6(b).

According to Appellants, the invention is directed to a disposable macroscopically three-dimensional non-apertured cleaning sheet for

cleaning a surface having particulate soils, where the cleaning sheet comprises a first layer of nonwoven material, a second layer of nonwoven material, with the first layer entangled to the second layer forming a working face and a back face, and the working face has non-random raised regions and recessed regions with a specified Average Height Differential and channel width (Br. 2). Independent claim 1 is illustrative of the invention and a copy of this claim is reproduced below:

1. A disposable macroscopically three-dimensional non-apertured cleaning sheet for cleaning a surface having particulate soils, said cleaning sheet comprising a first layer of nonwoven material, a second layer of nonwoven material wherein said first layer is entangled to said second layer, wherein said first and second layers form a structure having a working face and a back face, wherein the working face comprises non-random raised regions and recessed regions, wherein said working face has an Average Height Differential of at least about 1 mm, wherein said recessed regions form a continuous pattern in the X-Y dimension surrounding discrete raised regions wherein said continuous recessed pattern comprises channels having a width of between about 1 mm to about 8 mm and wherein said non-random raised regions and said recessed regions form pockets on the surface of said working face for trapping particulates from said surface to be cleaned.

The Examiner has relied on the following prior art reference as evidence of obviousness:

Greenway

US 5,281,461

Jan. 25, 1994

#### ISSUES ON APPEAL

Appellants have stated that the only ground of rejection presented for review in this appeal is the rejection of claims 1, 49, and 62 under 35 U.S.C.

§ 103(a) as unpatentable over Greenway (Br. 3; Supp. Br. 1).<sup>1</sup> This is the only rejection presented and addressed in the Answer (Answer 3).

Appellants contend that Greenway does not suggest any modifications that would provide cleaning sheets with the claimed Average Height Differential and channel widths, nor does the reference suggest any correlation between softness and hand-feel with these claimed properties (Br. 5-6).

Appellants contend that there is no reasonable expectation of success in Greenway, since rounding the edges of the apertures in the reference would not result in a cleaning sheet having the claimed channel width or Average Height Differential (Br. 6, 8). Appellants contend that Fig. 6B of Greenway shows a thickness of the screen which is 0.030 inches (0.762 mm), far below the claimed Average Height Differential value (Br. 9).

The Examiner contends that Greenway discloses a fabric that has a pattern textile-like aesthetic finish, with an array of dense nodes connected by a diamond-shaped pattern of interstitial fibers, and teaches that the degree of entanglement and pattern produced are result-effective variables related to

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<sup>1</sup> As clarified in the “Supplemental Appeal Brief” dated Aug. 11, 2007, Appellants state that claims 1, 49, and 62 are the only claims on appeal and that all dependent claims thereon are cancelled (Supp. Br. 1, purporting to cancel claims 2-3, 11-18, 21-25, 31-34, 37, 38, 47, 48, 50-61, and 63-72). Since this amendment has not been formally presented nor entered by the Examiner, we consider all the above dependent claims to be still pending in this application. However, we limit our review to the only claims on appeal, i.e., claims 1, 49, and 62. Upon return of this application to the jurisdiction of the Examiner, the Examiner should consider Appellants’ statement cancelling the dependent claims and indicate if this amendment should be entered.

the strength and hand of the fabric (Answer 3-4). The Examiner contends that while Greenway does not use the same language as Appellants for the properties of channel width and Average Height Differential, Greenway does disclose a forming surface made up of a series of raised and recessed regions while teaching that the particular texture and pattern of the fabric relates to the desired aesthetic properties and tensile strength (Answer 5-6).

Accordingly, the issues presented from the record in this appeal are as follows: (1) Has the Examiner identified a reasonable basis for believing that the product of Greenway is substantially similar to the claimed product, even in the absence of a disclosure of the claimed properties; and (2) Has the Examiner identified reasons why one of ordinary skill in the art would have modified the Greenway product to produce a cleaning sheet that is the same or substantially similar to the claimed product?

We determine that the Examiner has met the initial burden of proof and established a prima facie case of obviousness in view of Greenway. We further determine that Appellants' arguments do not adequately rebut this prima facie case. Therefore, we AFFIRM the sole rejection in this appeal essentially for the reasons stated in the Answer, as well as those reasons set forth below.

#### OPINION

We determine the following Factual Findings from the record in this appeal:

- (1) Greenway discloses an apparatus and related process for entangling a fibrous web having two layers to form a textile-like fabric having a uniform, non-apertured surface with a symmetrical

pattern of void areas, including an objective of providing a durable, nonwoven fabric characterized by conformability to wiping surfaces (Abstract; col. 2, ll. 23-27; and col. 4, ll. 55-58);

- (2) Greenway discloses that the art has recognized that fiber orientation within nonwoven web materials employed in fluid entangling processes correlates to physical properties; and the invention is directed to a fluid entangling process which obtains a higher degree of fiber entanglement with consequent improved fabric texture and tensile characteristics (col. 1, ll. 49-52; and col. 2, ll. 9-13);
- (3) Greenway discloses that the entangling member is formed from a plate including a plurality of generally circular apertures, with baffle members having a radiused curvature which define apertures having a “frusto-conical” configuration, thus resulting in a textile-like fabric pattern in which an array of dense nodes are connected by a diamond shaped pattern of interstitial fibers (col. 2, ll. 52-60; col. 3, ll. 3-13; *see* Figs. 4D, 5A, and 5B, with accompanying text at col. 6, ll. 12-23);
- (4) Greenway exemplifies the use of square and frusto-conical entangling members (*see* Figs. 6A and 6B; col. 7, ll. 1-4), while teaching that “other geometric configurations ... may be employed” (col. 13, ll. 12-16);
- (5) Appellants teach that the Average Height Differential is the height of the raised regions above the recessed regions, while the channel

width is the width between the continuous recessed pattern (Specification 8:11-19); and

- (6) Appellants disclose that the process of making the claimed products includes hydroentangling the fibers of the structure on a forming belt having the desired pattern of raised and recessed regions (Specification 12:32-13:31).

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations. *See Graham v. John Deere of Kansas City*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). “Appellants have chosen to describe their invention in terms of certain physical characteristics of the roughened substrate surface... Merely choosing to describe their invention in this manner does not render patentable their method...”. *In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975). The discovery of an optimum value of a result-effective variable is generally obvious. *See In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

Applying the preceding legal principles to the Factual Findings in the record of this appeal, we determine that the Examiner has established a prima facie case of obviousness. As shown by Factual Findings (1) and (3) listed above, we determine that Greenway discloses a macroscopically three-dimensional non-apertured fabric, which can be used as a cleaning sheet for wiping surfaces, comprising a first and second layer of nonwoven material

where the first and second layers are entangled to form a front (working) and back face, with the front face having non-random raised regions and recessed regions (“a uniform pattern of protuberances”; Answer 3; *see* Figs. 8A, 8B, 9A, 9B, 10A, and 10B). As shown by Factual Findings (2) and (4) listed above, Greenway teaches that the amount of entanglement correlates with the desired physical properties, and the particular configuration and pattern is well within the ordinary skill in this art. We determine that the Average Height Differential depends on the amount of entanglement and the width between channels correlates with the desired pattern of void areas and solid areas (*see* Factual Finding (5) listed above).<sup>2</sup> Therefore, we determine that optimization of these result-effective variables would have been well within the ordinary skill in this art.

Furthermore, we determine that the process of making the product as disclosed by Greenway is essentially the same as the process disclosed by Appellants, differing only by the particular desired pattern of raised and recessed regions (*see* Factual Finding (6) listed above and Greenway, col. 4, l. 55- col. 5, l. 18). As noted above, we determine that Greenway teaches the use of various patterns would have been well within the ordinary skill in this art (*see* Factual Finding (4) listed above). We note that Appellants have not presented any evidence of unexpected results.

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<sup>2</sup> *See*, for example, the exemplification disclosed by Greenway of apertures with a center-to-center staggered spacing of 3/32 inch and a thickness of 0.030 inch (col. 6, ll. 24-41). Of course, the disclosure of Greenway is not limited to his examples. *See In re Widmer*, 353 F.2d 752, 757, 147 USPQ 518, 523 (CCPA 1965).

For the foregoing reasons and those stated in the Answer, we affirm the rejection of claims 1, 49, and 62 under § 103(a) over Greenway. The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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